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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/817,047

04/02/2004

Isaac Farr

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EXAMINER

SASTRI, SATYA B

ART UNIT

PAPER NUMBER

1713

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/817,047

Applicant(s)

FARR ET AL.

Examiner

Satya B. Sastri

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on November 14, 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to amendment filed on Nov. 14, 2006. Claims 1-32 are now pending in the application.

Claim Objection

2. ***Claim 1*** is objected to because of a missing phrase. The amended claim does not recite what the basic component reacts with.

3. The composition of claim 1 with the specific elected species, i.e. reactive glasses as basic component, polyacrylic acid as acidic component, difunctional acrylate as acrylate, benzoyl peroxide as oxidizing agent, water-soluble amine as reducing agent, water as binder, ethanol as viscosity modifier and fluoro surfactant as surface tension modifier is found novel. Search is further extended to other non-elected species as well and this office action presents new rejections based on this search.

Previously Cited Statutes

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

5. Claims 11-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Instant claims depend on composition of claim 10 that does not recite a polyacrylate component.

6. Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over to Janney et al. (US 6,228,299 B1) in view of evidence provided by <http://www.rtvanderbilt.com/documents/MSDS/CAN/14442.pdf>.

Prior art to Janney et al. discloses gelcasting compositions comprising an inorganic powder, solvent, monomer system soluble in the solvent, an initiator system and a plasticizer soluble in the solvent. Dispersants and other processing aids to control slurry properties can be added. Disclosed inorganic powders include metal oxides and various alloys (col. 3, lines 62-67 and col. 4., lines 1-18). Disclosed monomers include alkyl acrylamides, alkyl acrylates, multifunctional diacrylates and polyacrylates etc. (column 4, lines 25-56). The solvent system can be selected from water, alcohols, glycol ethers, ketones hydrocarbons and mixtures thereof. The plasticizer is soluble in the solvent and is capable of improving the flexibility, workability or extensibility of the plastic material. It may also reduce the melt viscosity (column 4, lines 60-68). Preferred plasticizers include PEG and TWEEN 80. Disclosed redox initiators include ammonium or sodium persulfate and tetramethylethylene diamine mixtures (col. 7., lines 1-10).

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The initiator system may be activated by heating or by radiation such as IR, visible, UV, X-rays etc. (col. 7, lines 2-29, col. 8, lines 1-6).

Additionally, various dispersants such as acrylic and methacrylic acids/salts may also be included in the composition (column 9, lines 55-65). Other ingredients that may be added to impart additional properties to the final gelcast composition include inorganic particles or fibers, organic particles or fibers, emulsifiers etc. (column 11, lines 38-44). Solvents typically make up 20-90 volume % of the gelcasting composition. Dispersants, flocculants and suspending agents are added to control the flow behavior of the suspension. Dispersants make the suspension flow more readily. These additives are typically incorporated in amounts of 0.1 to 10% by wt. Suitable dispersants include alcohol-ethylene oxide adducts, poly(methacrylic acid) and its salts etc. (column 13, lines 1-20). Plasticizers are incorporated in amounts of 1-20% by wt. of the monomer (col. 13, lines 20-25). The basic component and acidic component recited in the instant invention reads metal oxide and dispersants such as poly(meth)acrylic acid and/or salts of the prior art. The oxidizing and reducing agent read on redox initiators such as ammonium or sodium persulfate and tetramethylethylene diamine mixtures. Additionally, acrylate compound reads on monofunctional and multifunctional acrylates disclosed in col. 4.

Working examples 2, 3, 4 include water, aluminum oxide (basic component), DARVAN 821 A (dispersant, acidic component), ammonium persulfate (oxidizing agent) and TEMED (reducing agent, water soluble amine), acrylic monomer (acrylate/diacrylate) and glycerin (viscosity modifier). Thus, the working examples include the binder, basic component, acidic component, viscosity modifier, oxidizing agent, reducing agent, acrylate of the instant invention. Additionally, Example 4 includes a surface tension modifier, TWEEN 80 ®.

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The difference between the prior art and the instant invention is that the prior art does explicitly disclose compositions comprising a plurality of fibers.

The prior art teaches optional additives for property improvement and discloses the use of inorganic particles or fibers, organic particles or fibers etc. (col. 11, lines 40-44) for the same purpose. Given that the genus of such additives is small, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include any of the disclosed additives, including a plurality of fibers for property improvement and thereby obtain the instant invention.

Evidence that DARVAN 821A is ammonium polyacrylate is provided. It is noted that can serve as a viscosity modifier (because it can modify the flow properties of the resultant mixture, col. 9, lines 55-65) or as an acidic component of the instant invention.

Regarding claim 7, it is noted that the prior art compositions include a functionally equivalent ammonium salt of poly(acrylic acid) as viscosity modifier.

With regard to claim 8, it is noted that the prior art discloses the use functionally equivalent polyethylene glycol and TWEEN 80 ® that are capable of modifying the surface tension (col. 5, lines 40-64). Absent evidence of criticality, the instant invention is an obvious modification of the prior art through functionally equivalent additives.

Regarding claims 11-13, it is noted that the claims recite a composition and that would have been obvious over prior art. It would have been obvious for a skilled artisan to spatially separate the oxidizing agent and the reducing agent to prolong the shelf life of the formulation. The remainder of the ingredients may be either in powder component or with the polar binder, absent evidence of criticality to claimed combination.

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Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (571) 272 1112.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached at (571) 272 1114.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SATYA SASTRI

January 12, 2007



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SUPERVISORY PATENT EXAMINER
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